CLAIMS

WE CLAIM:

1. A method of adding a component into an industrial control device, the industrial control device providing a set of resources having types and version numbers, the method comprising the steps of:

(a) determining a required resource list of types and version numbers of resources required by the component;

(b) linking the required resource list to the component;

(c) executing a loader program to compare the required resource list with the predetermined set of resources and:

(i) when the entire required resource list, including the types and version numbers, match the set of resources, adding the component to the industrial control device; and

(ii) when less than the entire required resource list, including the types and version numbers, match the set of resources, determining the types and version numbers of the missing resources and searching for the missing resources according to a predefined search strategy.

2. The method of claim 1 wherein the component is selected from the group consisting of hardware components including hardware and files, and resources including files only.

3. The method of claim 1 including the step of (c)(iii) when a missing resource is not found in the search strategy, providing a notification to the user of the type and version of the missing resources not found.

4. The method of claim 1 wherein the resources are selected from the group consisting of hardware resources including hardware and files, and software resources including files only.

5. The method of claim 1 wherein the predefined search strategy begins the search with a directory of a source of the component.

6. The method of claim 1 wherein the predefined search strategy includes searching at least one predetermined Internet location.

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7. The method of claim 1 including further the step of:

(c)(iii) when a missing resource found in the search strategy is a resource having a type but not a version identical with a corresponding resource in the set of resources, adding the missing resource to the industrial control device without removing the corresponding resource.

8. The method of claim 6 wherein the corresponding resource is in a common directory and the new resource is placed in a directory unique to the resource.

9. The method of claim 1 including further the steps of:

(d) determining upward compatibility between different version numbers of resources of a given type, upward compatibility indicating that a resource of a later version number fully supports the features of a resource with an earlier version number;

(e) linking the information about the compatibility to the resources;

(f) when a missing resource found in the search strategy is a resource having a type identical with a corresponding resource in the set of resources but a later version number, replacing the corresponding resource with the missing resource only when the missing resource is upwardly compatible with the corresponding resource.

10. The method of claim 1 including further the steps of:

(d) determining upward compatibility between different version numbers of resources of a given type, upward compatibility indicating that a resource with a later version number fully supports the features of a resource of an earlier version number;

(e) linking the information about the compatibility to the resources;

(f) when a missing resource found in the search strategy is a resource having a type identical with a corresponding resource in the set of resources but an earlier version number, using the corresponding resource instead of the missing resource only when the corresponding resource is upwardly compatible with the missing resource.

11. The method of claim 1 wherein the set of resources is determined by a program searching the industrial control device prior to step (c).

12. The method of claim 1 wherein the set of resources is listed in an available resource table in the industrial control device and wherein step (c) compares the required resource list with the available resource table.

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13. The method of claim 11 wherein the available resource table is generated at least in part by manual entry of the resource.

14. The method of claim 11 wherein the available resource table is generated by the step of a program searching the industrial control device.

15. The method of claim 11 wherein the available resource table is generated as components are loaded.

16. The method of claim 11 wherein the available resource table includes a listing of components using each resource.

17. The method of claim 14 including the step of:

(d) adding the resource to the available resource table in the listing of components using each resource for the resources of the required resource list.

18. The method of claim 16 further including the steps of:

(e) accepting a component deletion instruction;

(f) deleting the component from the industrial control device;

(g) reviewing the available resource table to find all the resources associated with the component; and

(h) deleting all resources identified in the step (f) unless the available resource table indicates a component other than the component being deleted in the listing of components using the resource.

19. The method of claim 15 including the step of:

(i) deleting the resource from all listing of components associated with resources of the available resource table.

20. The method of claim 17 further including the step of (j) notifying the user of resources identified in the step (f) wherein the available resource table indicates a component other than the component being deleted in the listing of components using the resource.

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